

# Time Critical Diagnosis—Stroke and STEMI System Implementation

May 12, 2009

## DIFFERENCES BETWEEN STROKE AND STEMI CENTER LEVELS

Level and Criteria	STEMI	Stroke
<b>Level I Center</b>		
<b>1. Emergency Department (ED)</b>	<ul style="list-style-type: none"> <li>May be by-passed to go directly to cardiac catheterization lab</li> <li>24/7 in-house (IH)ED physician</li> </ul>	<ul style="list-style-type: none"> <li>May be by-passed to go directly to IR</li> <li>24/7 in-house (IH)ED physician</li> </ul>
<b>2. Intensive Care Unit</b>	<ul style="list-style-type: none"> <li>With Cardiology expertise and support for further advanced treatment</li> <li>Generally accepted ICU equipment</li> </ul>	<ul style="list-style-type: none"> <li>With stroke/neurology expertise and support for further advance treatment</li> <li>Equipment</li> </ul>
<b>3. Specialized Care</b>	<ul style="list-style-type: none"> <li>L-VAD with advance support</li> <li>24/7 Cardiac Artery Bypass Graft promptly available</li> <li>24/7 Cardiac catheterization lab, angiography &amp; interventional capabilities (PA)</li> <li>Available consultation services for region</li> </ul>	<ul style="list-style-type: none"> <li>24/7 Neurointerventional capability/angiography/IR (PA)</li> <li>24/7 Neurology</li> <li>24/7 NSG coverage (PA)</li> <li>24/7 Diagnostic Radiology (CT (IH)/MRI available)</li> <li>Available consultations services for region</li> </ul>
<b>4. Surgery</b>	<ul style="list-style-type: none"> <li>Cardiac surgery back up 24/7</li> </ul>	<ul style="list-style-type: none"> <li>Neurosurgery; vascular surgery; endovascular experts</li> </ul>
<b>5. Inpatient beds</b>	<b>X</b>	<b>X</b>
<b>6. Rehabilitation Services available (Phase 1)</b>	<b>X</b>	<b>X</b>
<b>7. Higher volumes of care</b>	400 Elective PCI/year (quality measure alternatives will be considered to establish L1 criteria if 400 is not achieved)	
	>49 Primary PCIs	
<b>8. Performance Expectations-</b> meet quality measures	<b>X</b>	<b>X</b>
<b>9. Personnel-</b> Advanced training and certifications to support specialized services	<b>X</b>	<b>X</b>
<b>10. Designated helicopter landing area</b>	<b>X</b>	<b>X</b>
<b>11. Equipment-</b> Appropriate for advanced level of care	<b>X</b>	<b>X</b>
<b>12. Policy</b>		
<ul style="list-style-type: none"> <li>Accept all stroke &amp; STEMI transfers</li> </ul>	<b>X</b>	<b>X</b>
<ul style="list-style-type: none"> <li>One call access to activate transfer</li> </ul>	<b>X</b>	<b>X</b>
<ul style="list-style-type: none"> <li>One-call access for activation of specialized services</li> </ul>	<b>X</b>	<b>X</b>
<ul style="list-style-type: none"> <li>Make arrangements for repatriation to community hospital, if indicated</li> </ul>	<b>X</b>	<b>X</b>
<b>13. Community Education</b>	<b>X</b>	<b>X</b>
<b>14. Research</b>	<b>X</b>	<b>X</b>

IH-In house, IA-Immediately available (within 20 minutes of notification), PA-Promptly available (within 30 minutes)

## DIFFERENCES BETWEEN STROKE AND STEMI CENTER LEVELS

Level and Criteria	STEMI	Stroke
<b>Level II Center</b>		
<b>1. Emergency Department</b>	May be by-passed to go directly to cardiac catheterization lab 24/7 in-house (IH)ED physician	24/7 in-house (IH)ED physician
<b>2. Intensive Care Unit</b>	<ul style="list-style-type: none"> <li>With Cardiology expertise and support for further advanced treatment</li> <li>Generally accepted ICU equipment</li> </ul>	<b>X</b>
<b>3. Specialized Care</b>	<ul style="list-style-type: none"> <li>24/7 Cardiac catheterization lab, angiography and interventional capabilities, PA</li> </ul>	<ul style="list-style-type: none"> <li>24/7 neurology (PA)</li> <li>24/7 Diagnostic Radiology (CT (IH))</li> <li>Neurosurgery consultation services within 2 hours</li> </ul>
<b>4. Inpatient beds</b>	<b>X</b>	<b>X</b>
<b>5. Rehabilitation Services Available (Phase 1)</b>	<b>X</b>	<b>X</b>
<b>6. Volumes of care</b>	At least 200 Elective PCI/year (quality measure alternatives will be considered to establish L2 criteria if 200 is not achieved)	
	>36 Primary PCIs	
<b>7. Performance Expectations-</b> Meet quality measures	<b>X</b>	<b>X</b>
<b>8. Personnel-</b> Advanced training and certifications to support specialized services	<b>X</b>	<b>X</b>
<b>9. Designated helicopter landing area,</b>	<b>X</b>	<b>X</b>
<b>10. Equipment-</b> Appropriate for advanced level of care	<b>X</b>	<b>X</b>
<b>11. Policy</b>		
<ul style="list-style-type: none"> <li>Accept all stroke and STEMI transfers</li> <li>One call access to activate transfer</li> <li>One-call access for activation of specialized services</li> <li>Make arrangements for repatriation to community hospital, if indicated</li> </ul>	<b>X</b>  <b>X</b>  <b>X</b>  <b>X</b>	<b>X</b>  <b>X</b>  <b>X</b>  <b>X</b>
<b>12. Community Education</b>	<b>X</b>	<b>X</b>

### Differences from Level I

- Fewer specialized care requirements
- Lower PCI volumes
- No research requirement

## DIFFERENCES BETWEEN STROKE AND STEMI CENTER LEVELS

Level and Criteria	STEMI	Stroke
<b>Level III Center</b>		
<b>1. Emergency Department</b>	<ul style="list-style-type: none"> <li>• 24/7 in-house (IH)physician</li> </ul>	<ul style="list-style-type: none"> <li>• 24/7 physician-IA</li> </ul>
<b>2. Intensive Care Unit</b>	<ul style="list-style-type: none"> <li>• With Cardiology expertise and support for further advanced treatment</li> <li>• Generally accepted ICU equipment</li> </ul>	
<b>3. Specialized Care</b>	<ul style="list-style-type: none"> <li>• Lytic Centers (No part time PCI)</li> <li>• Must have rapid transfer protocol in place and capability to administer lytics to eligible patients, and stabilize</li> <li>• If immediate condition not improving with lytic and PCI required, immediately transfer to a PCI designated facility. (Drip and ship)</li> </ul>	<ul style="list-style-type: none"> <li>• Drip and ship</li> <li>• 24/7 Diagnostic Radiology (CT) available</li> </ul>
<b>4. Inpatient beds</b>	<b>X</b>	<b>X</b>
<b>5. Performance Expectations-</b> Meets quality measures	<b>X</b>	<b>X</b>
<b>6. Personnel-</b> training and certifications to support specialized services	<b>X</b>	<b>X</b>
<b>7. Helicopter Designated Landing Area</b>	<b>X</b>	<b>X</b>
<b>8. Equipment-</b> Appropriate for level of care	<b>X</b>	<b>X</b>
<b>9. Policy</b>		
<ul style="list-style-type: none"> <li>• One call access to activate transfer</li> </ul>	<b>X</b>	<b>X</b>
<ul style="list-style-type: none"> <li>• Accept all appropriate(<u>how is this defined in state law?</u>) stroke and STEMI EMS transports per destination protocols</li> </ul>	<b>X</b>	<b>X</b>
<ul style="list-style-type: none"> <li>• One call access to activate</li> </ul>	<b>X</b>	<b>X</b>
<ul style="list-style-type: none"> <li>• Make arrangements for repatriation to community hospital, if indicated</li> </ul>		
<b>10. Community Education</b>	<b>X</b>	<b>X</b>

### Differences from Level II

- Generally drip and ship facilities
- For STEMI patients, potential to keep when PCI is promptly available; transfer where warranted, not source for primary PCI on emergency basis

## DIFFERENCES BETWEEN STROKE AND STEMI CENTER LEVELS

Level and Criteria	STEMI	Stroke
<b>Level IV Center</b>		
<b>1. Emergency Department</b>	24/7, IA physician	24/7, IA physician
<b>2. Specialized Care</b>	<ul style="list-style-type: none"> <li>Stabilize life-threatening conditions when in proximity</li> <li>Drip and Ship: must have rapid transfer protocol in place and capability to administer lytics to eligible patients &amp; stabilize</li> </ul>	<ul style="list-style-type: none"> <li>Stabilize life-threatening conditions when in proximity</li> <li>Triage and transfer</li> </ul>
<b>3. Personnel-</b> training and certifications to support services	<b>X</b>	<b>X</b>
<b>4. Equipment-</b> Appropriate for level of care	<b>X</b>	<b>X</b>
<b>5. Helicopter landing site</b>	<b>X</b>	<b>X</b>
<b>6. Performance Expectations-</b> Meet quality measures	<b>X</b>	<b>X</b>
<b>7. Policy</b> <ul style="list-style-type: none"> <li>One call access to activate transfer</li> </ul>	<b>X</b>	<b>X</b>
<b>8. Community Education</b>	<b>X</b>	<b>X</b>

### Difference from Level III

- Services to support patient stabilization and rapid transfer to a higher level center.